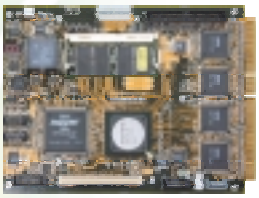
IFT-6300F-12
12-Bay IDE RAID Subsystem

SCSI-to-IDE
Fibre-to-IDE

IFT-7250F
12-Bay RAID Controller



MODELS

SUBSYSTEM	HOST CHANNEL
6300F-12U3D	Dual Ultra160
6300F-12F2	Single 2G Fibre
6300F-12F2D	Dual 2G Fibre

BOARD-ONLY	HOST CHANNEL
7250F-12U3D	Dual Ultra160
7250F-12F2	Single 2G Fibre
7250F-12F2D	Dual 2G Fibre

OVERVIEW

The IFT-6300F-12 rackmount subsystem supports SCSI-to-IDE and Fibre-to-IDE solutions. It is an ideal alternative to SCSI or Fibre RAID subsystems with the same protection to data and exceptional performance.
The 64-bit separate-bus backbone is built around a dedicated XOR engine running at twice the data bus speed. Calculation of parity and distribution of data can be processed at raging speed among CPU, memory, and drives. Advanced firmware algorithms and the L2-enabled CPU further accelerate IO turnarounds in term of optimized access patterns and reduced response time.

The IFT 6300F-12 rackmount unit supports massive capacity with 12 hot-swappable trays in a standard 19-inch equipment cabinet-size enclosure.

Supported RAID levels are: 0, 1 (0+1), 3, or 5. Except RAID level 0, the system allows one HDD failure without impact on the existing data and failed drive rebuild is transparent to the host. System operation is constantly protected by redundant cooling fans and power supplies. System information is easily accessible via the control panel, RAIDGuide Manager, or VT100 terminal emulation.

Infortrend®

KEY FEATURES

- **PowerPC 750CXe 400 CPU** with 256Kb embedded L2 cache
- 64/128/256MB SODIMM cache memory available, addressable to 1GB
- **Two Ultra160-Wide** LVD SCSI ports; Sustained Transfer rate up to 160MB/sec for each ***OR***
- **One or Two 2Gbit FC-AL** Fibre Channels; Sustained transfer rate up to 200MB/sec for each
- Support 12 ATA-100 compatible hard disk drives, 133 applicable
- Supports 3.5" x 1" high EIDE drives
- RAID levels: 0, 1 (0+1), 3, 5
- Multiple Logical Drive configurations and each with a different RAID level
- Auto rebuild, hot spare, and hot swap capability
- Online expansion
- Configurable optimization mode: ransom or sequential
- Built-in RTC (Real Time Clock)
- Multi-host support
- Bad Block Handling: for managing bad blocks during rebuild and the manual Bad Block Scrub function for drive maintenance
- User-friendly RAIDGuide GUI Manager on Window 2000 and NT
- RS232 VT100 terminal emulation for system setup and status report
- 350W Redundant and hot-swappable power supplies
- Redundant cooling fans
- 3U 19" cabinet-size enclosure
- OEM board only solutions allowing 12-bay ATA-100 drive deployment

High Performance

Featuring a 64-bit 133MHz memory bus, the unparalleled bandwidth makes the subsystem's high data throughput more than sufficient for small-to-medium sized servers or workstations. Data can be distributed through the 133MHz, 64-bit memory bus at the burst rate up to 1064MB/sec and the system's overall performance reaches 250MB/sec (sustained reads with two Ultra160 SCSI).

The dual independent PCI bus design virtually eliminates all imminent bottlenecks on IO traffic, providing sufficient throughput for a wide range of applications on SCSI-based PCs, single-user workstations, NT, Linux, or Unix-based servers. providing sufficient throughput for a wide range of applications on SCSI-based PCs, single-user workstations, NT, Linux, or Unix-based servers.

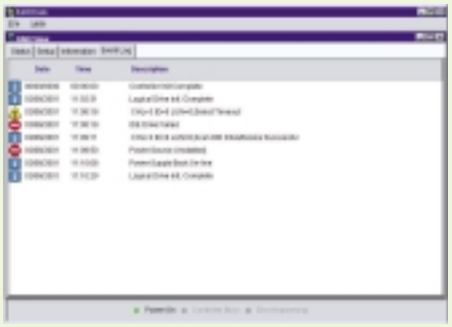
High Data Availability

The system provides full-featured RAID protection in the levels of 0, 1 (0+1), 3, and 5. Its high data availability derives from the following capabilities: automatic

RAIDGuide Manager

RAIDGuide is an easy-to-use, Java-based GUI RAID management software designed specifically for use with Infortrend's SCSI-to-IDE and Fibre-to-IDE RAID subsystems and controller boards. Operating under Java 2.0 (Java Run-time Environment 1.2 or 1.3), RAIDGuide provides a complete management interface to the disk array and a constant real-time report of the current RAID status, errors, events, and capacity.

RAIDGuide permits IDE RAID managers to quickly locate and rectify problematic hardware without downtime or data loss. Many RAID controller functions, such as password management and firmware upgrades can be handled through the software console. The information window provides information about all installed hard drives and the key elements of the RAID controller such as cache size.



Controller environmental conditions and current cache data status window, and RAID manual and auto setup, and RAID expansion are also supported from within RAIDGuide.

RAID managers can be notified of events occurred at virtually anywhere by the powerful event notification utility, NPC (Notification Processing Center). A variety of notification methods are available: e-mail, SNMP traps, LAN broadcast, fax, and pager.

RAIDGuide makes IDE RAID array management an easy matter of point-and-click from the local host via Java-enabled browser.

drive failure detection, automatic failed drive rebuild, hot spare, disk hot swap, and online expansion.

Bad Block Handling

Hard drives can fail and bad blocks may occur simultaneously on two separate drives. The occurrence of bad blocks on more than one drive usually leads to unrecoverable loss of data. To prevent data loss caused by this situation, two options are implemented: "Bad Block Scrub" and "Bad Block Handling in Degrade Mode." The Bad Block Scrub can be performed regularly to examine drives and data can be reconstructed onto good sectors if any bad blocks found during the process. If bad blocks are encountered on yet another drive during the rebuild process, the block LBA (Logical Block Address) of those bad blocks will be indicated and the rebuild process can be continued with the unaffected sectors, salvaging most of your precious data.

SAN Ability

LUN filtering function is available for controlling access to data in SAN environments. Up to 128 filter entries with configurable parameters are allowed for centralized management.

Redundant Power Supply

Two 350W, hot-swappable power supplies provide fault-tolerance to power source. With two power supplies installed, both will share the current consumption needs of the whole system. If one should fail, an alarm will sound and the remaining power supply will take over the full load until the faulty unit is replaced. The hot-swap feature ensures that the system remains operational while replacement is taking place. Power-supply modules are equipped with their own independent cooling fans.

Redundant Cooling Fan

Two cooling fans are installed for drive and controller cooling. The cooling fans can adjust the RPM through various temperature. The system's ventilation is from front to back. Specially designed airflow passages dissipate heat from the hard disks and the controller.

Enclosure Fault Management

The system can monitor the operating status of enclosure components, including that of fans, power supplies, and disk drives. Component failures are locally indicated on the LCD control panel, by the sounding alarm, or through the RAIDGuide manager software. The RAIDGuide's sub-module, NPC, can be used to notify system administrators remotely via e-mail, pager, fax, SNMP traps, or LAN broadcast.

Setup and Status Monitoring

The system will automatically initialize based on the number of disk drives installed at start up. Manual configuration and monitoring can be done through the LCD control panel. The firmware also contains an embedded management program that can be accessed using a VT100 terminal connected to the RS-232C port. The later is a convenient platform-independent management utility.

IFT-7250F CONTROLLER BOARD (OEM Solution)

An OEM board only solution - IFT-7250F controller is available for customers who design their own enclosure and want to take full advantage of the SCSI-to-IDE or Fibre-to-IDE controller's advanced functionality. The controller's sophisticated features, including environmental monitoring and fault management, can be easily integrated into OEM systems.

Modular IDE backplanes (with 1" drive pitch) and daughterboard options for different host types are available along with the controller board.

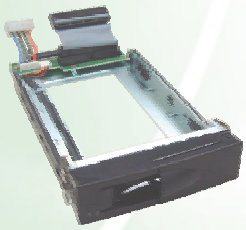
SUBSYSTEM SPARE PARTS

InIn order to facilitate customer service, Infortrend makes spare parts available for IDE subsystems:

Power Supply module:
IFT-9211R12

Cooling Fan:
IFT-9212B & IFT-9212

Drive Tray: IFT-9215-30



Note: each of these spare parts items may have a minimum order requirement.

SPECIFICATIONS

Controller

- PowerPC 750CXe 400MHz RISC processor with 256Kb embedded L2 cache
- Infortrend Proprietary ASIC133 with XOR, with ECC support
- Standard 64MB cache memory in one SODIMM SDRAM
- Other available memory sizes are 128, 256MB; up to 1GB is addressable
- 12 ATA channels
- LCD controller panel interface
- System Fan speed/Voltage/Temperature self-monitoring
- One RS232 serial port
- 32KB NVRAM with RTC (Real Time Clock)
- Beeper

Host Interface

SCSI

- Dual port Ultra160-Wide LVD SCSI
- Transfer rate up to 160Mbytes/sec
- Concurrent I/O command
- Tagged Command Queuing
- Automatic bad-sector reassignment

Fiber Channel

- One or two 2Gb Fiber Channel
- LUN Filtering for access control

Drive Interface

- EIDE ATA-100, 133 applicable
- Drive size up to 160GB
- 12 hot-swap drive bays

RAID Operation

- RAID level 0, 1 (0+1), 3 and 5
- Multiple RAID selection
- Hot-spare drive operation
- Drive hot-swapping
- Automatic background rebuild
- Online drive expansion
- Bad block handling

Controls / Indicators

- Front LCD control panel for setup and configuration
- 3 drive LED indicators: power, busy, and attention
- Power and drive failure indication through LCD
- Built-in beeper / alarm mute button

Management Software

- RAIDGuide manager software for Windows 2000 / NT via in-band SCSI or in-band Fibre
- Firmware-embedded manager via RS-232C (platform independent)

Physical / Electrical

External Connection	* Four 68-pin SCSI, daisy chain capable connectors for two host SCSI ports * Single short-wavelength LC port OR Two SFP ports for dual channel Fibre connection * One DB-9 connector for RS-232C serial port (38400, n, 8,1)
Power Supply	2 redundant hot-swappable power supplies with PFC
Input	90-260VAC, 47-63Hz
Output	@5V (20A max), 12V (25A max), 350 watts
Cooling Fan	2 thermal fans in two separate modules, 12cm, 12V, 0.41A, 2250rpm, 36.8dbA at 30°C 9.2cm, 12V, 0.23A, 2600rpm, 35dbA at 30°C
Operating Temperature	5 to 40°C
Relative Humidity	10-95%, non-condensing
Altitude	Sea level to 10,000 ft
Dimensions	
Rackmount	3U x 18.9W x 24.4D inches (rackmount configuration - 19" equipment cabinet size)
OEM controller board only:	board dimensions: 7.4L x5.82W x 0.98H inches

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* Quality is our priority and we back it with a 3 year warranty for the RAID controller and 1 year warranty for enclosure components.
* Specifications are subject to change without prior notice.

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